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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,130	02/18/2003	Jeong-Hwan Oh	4251-4020	5275

27123 7590 04/13/2007  
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NEW YORK, NY 10281-2101

EXAMINER
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LAVIN, CHRISTOPHER L

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/13/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/525,130	OH, JEONG-HWAN	
	Examiner	Art Unit	
	Christopher L. Lavin	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date <u>03/14/07</u> .                            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application  |
| Paper No(s)/Mail Date <u>02/18/05; 03/16/07</u> .                                      | 6) <input type="checkbox"/> Other: _____                           |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 6, 7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Izawa (5,615,280).

In regards to claim 1, A method of counting currency notes, comprising: step 1 of feeding a currency note into apparatus by detecting the currency note placed on a hopper using a hopper sensor and then driving a motor and a clutch (Figure 4, step 52); step 2 of detecting states of the fed currency note and then handling multiple feed/chain feed/jam feed errors based on the detection results (Figure 4, steps 52 and 57); step 3 of detecting the fed currency note, recognizing denomination of the currency note by scanning the image thereof, and extracting, storing and outputting an image of serial number region of the fed currency note (col. 3, line 54 – col. 4, line 15; figure 6; col. 6, lines 20 – 24); and step 4 of incrementing a count when denomination of the currency note has been recognized, and discharging the currency note to a stacker and a reject pocket based on the recognition results (Figure 6; col. 6, lines 29 – 35; col. 5, lines 12 – 18).

In regards to claim 3, The method as set forth in claim 1, wherein, in the step 3, the image of the serial number region is output, together with text data obtained through character recognition of the image data (Figure 6; col. 6, lines 20 – 24).

In regards to claim 6, An apparatus for counting currency notes, comprising: an automatic feeder unit for feeding a plurality of currency notes placed on a hopper one by one (Figure 1, items 11 and 23; figure 4, item 52); a drive unit for driving a motor when a hopper sensor detects the plurality of currency notes (col. 3, lines 41 – 51); a control unit for detecting states of the fed currency notes and handling multiple feed/chain feed/jam errors (Figure 4, steps 52 and 57); a sensor unit for detecting the currency notes and scanning an entire image of the currency notes (Figure 1, items 16, 24, 25, and 26); a signal processing unit for recognizing denominations of the currency notes from image data of the currency notes input from the sensor unit, extracting serial number regions with respect to each of the recognized denominations, and converting the extracted data into normalized image data of a constant size (col. 3, line 54 – col. 4, line 15; figure 6; col. 6, lines 20 – 24); a transfer unit for transferring the fed currency notes to an outlet (Figure 1, item 21); a selector unit for selectively discharging the currency notes to a stacker and a reject pocket in accordance with process results of the currency notes (Figure 1, item 47); and an output unit for outputting stored image data to a printer (Figure 1, item 19).

In regards to claim 7, The apparatus as set forth in claim 6, wherein the signal processing unit outputs text data obtained through character recognition of the stored image data, together with the stored image data, through the output unit (Figure 6).

In regards to claim 9, The apparatus as set forth in claim 6, wherein the signal processing causes the compensated image data to be upside down when a top and a bottom thereof are reversed (Figure 4, items 57 and 58).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 2, 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Izawa and Conant (5,680,472).

In regards to claim 2, The method as set forth in claim 1, wherein the step 3 comprises: step 3-1 of scanning the currency note in lines and storing the scanned images in an internal memory in an image data form (Figure 1, col. 3, lines 53 – 64); step 3-2 of finding contours of the currency note from the image data stored in the internal memory (col. 2, lines 33 – 35); [step 3-3 of compensating for skew or geometrical distortion of the image data by geometrically correcting and preprocessing

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the image data]; step 3-4 of recognizing denomination of the currency note from the compensated image data using a pattern recognizing method employing template matching in accordance with the inserted direction of the currency note (col. 3, line 54 – col. 4, line 15); step 3-5 of setting serial number region and extracting the image of the serial number region for the currency note whose denomination have been recognized using previously known serial number position information with respect to the recognized denomination (col. 5, line 58 – col. 6, line 7); step 3-6 of converting the extracted image data into normalized image data of a certain size (col. 5, line 58 – col. 6, line 7); and step 3-7 of storing and outputting the image data (col. 5, line 58 – col. 6, line 7; col. 6, lines 20 – 24).

As indicated above Izawa does not disclose the concept of skew correction. However, deskewing is a well known concept in the art as shown by Conant (col. 2, lines 4 – 10).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide deskewing (as taught by Conant) in the invention disclosed by Izawa. As Conant teaches using deskewing techniques requires less mechanical structure to properly position the bills, thus speeding the process and saving manufacturing costs.

In regards to claim 4, The method as set forth in claim 2, further comprising the step of correcting the compensated image data when top and bottom of the currency note is reversed, between step 3-3 and step 3-4 (Figure 4, items 57 and 58).

In regards to claim 8, claim 8 is rejected for the same reasons as claim 4. The argument analogous to that presented above for claim 4 is applicable to claim 8.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Izawa, Conant and Higgens (5,091,968).

The combination of Izawa and Conant does not disclose that the image data is converted in binary. Figure 6 of Izawa seems to suggest that this is the case, but Izawa never directly states that the image data is stored or outputted in binary. This concept is well known as shown by Higgens (col. 47 – 65).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to convert the image data into binary (as taught by Higgens) in the invention disclosed by Izawa and Conant. Converting into binary would allow for easier pattern recognition.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Izawa and Higgens.

Izawa does not disclose that the image data is converted in binary. Figure 6 of Izawa seems to suggest that this is the case, but Izawa never directly states that the image data is stored or outputted in binary. This concept is well known as shown by Higgens (col. 47 – 65).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to convert the image data into binary (as taught by Higgens) in the invention disclosed by Izawa. Converting into binary would allow for easier pattern recognition.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. US Pat. 4,201,978 discloses a standard check reader.

10. US Pat. 6,668,074 discloses a check reader with a gui that displays results to the user for monitoring.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher L. Lavin whose telephone number is 571-272-7392. The examiner can normally be reached on M - F (8:30 - 5:00).

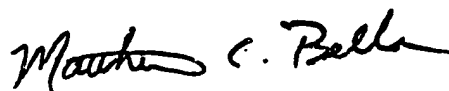
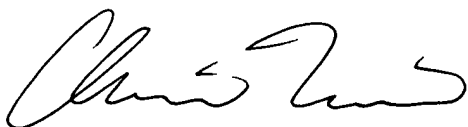
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh M. Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher Lavin



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